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New Species of Fungi.

BY CHAS. H. PECK.

LEPIOTA MUTATA.

Pileus thin, convex, subumbonate, slightly scabrous on the disk, white, changing to brown on the disk in drying; lamellae close, thin, subventricose, free, white; stems slender, equal, hollow, white; the annulus slight, sometimes evanescent; spores elliptical, .0003 to .0004 in. long, .0002 to .00024 broad; pileus 1 to 1.5 in. broad; stem about 1 in. long 1 to 2 lines thick.

Ground in woods. Kansas. July. E. Bartholomew.

In the fresh condition this plant is entirely white, but in the dried specimens the umbo or disk has become brown. This change in color suggests the specific name. In the other white species, *L. erminea* and *L. alba*, the spores are longer, and in *L. miamensis* and *L. subremota* the pileus is scaly.

CLITOCYBE SUBSOCIALIS.

Pileus fleshy, convex, becoming somewhat depressed centrally, minutely squamulose, pale tawny or subrufescent, flesh white, taste and odor nauseous; lamellae subdistant, decurrent, white, the interspaces venose; stem equal, solid, colored like the pileus, having a white mycelioid tomentum at the base; spores subelliptical, .00024 to .0003 in. long, .00016 to .0002 broad, slightly apiculate at one end and usually containing a shining nucleus; pileus 6 to 18 lines broad; stem 1 to 2 in. long, 1 to 2 lines thick.

Grassy ground. Camas, Washington. December. F. C. Yeomans.

The species is apparently closely allied to *Clitocybe socialis*, from which it differs in its strong odor, squamulose pileus and white lamellae. It also approaches *C. sinopica* and *C. infundibuliformis* in color, but in both these the pileus is also glabrous. The squamules are somewhat granular in appearance.

OMPHALIA LUTEOLA.

Pileus thin, convex or sub-hemispherical, glabrous, centrally depressed or broadly umbilicate, buff-yellow; lamellae few, 10-15, distant, decurrent, pallid; stem slender, glabrous, solid, brown, with white mycelium at the base; spores subelliptical, .00024-.00028 in long, about .00016 broad, commonly uninucleate; pileus 2-4 lines broad; stem about 6 lines long, .5 thick.

Decaying wood of fir trees. Camas. February. Yeomans.

The small size, buff pileus solid stem and pallid lamellae are the distinguishing features of this species. It is closely related to *O. Campanella*, but the paler colors of the pileus and lamellae and the white mycelium will separate it. The stem appears to be solid, but it is possible that in fully mature specimens there may be a small cavity.

LACTARIUS LUTEOLUS.

Pileus fleshy, rather thin, convex or nearly plane, commonly umbilicately depressed in the center and somewhat rugulose, pruinose or subglabrous, buff color, flesh white, taste mild, milk copious, flowing easily, white or whitish; lamellae close, nearly plane, adnate or slightly rounded behind, whitish, becoming brownish where wounded; stem short, equal or tapering downward, solid, but somewhat spongy within, colored like the pileus; spores globose, .0003 in. broad; pileus 2-3 in. broad; stem 1-1.5 in. long, 3-5 lines thick.

Dry woods. East Milton, Massachusetts. August. H. Webster.

This species is related to *Lactarius volemus* and *L. hygrophoroides*, but its smaller size and short stem will distinguish it from the former and its close lamellae from the latter. Its paler buff color will separate it from both. Some specimens have a narrow encircling furrow or depressed zone near the margin and a slightly darker shade of color on the margin. The milk constitutes a remarkable feature of the species. According to the notes of the collector it is exceedingly copious, rather sticky, serous in character with white particles in suspension. It flows from many points as soon as the plant is disturbed and it stains the gills. It is impossible to collect an unstained specimen, so free is the flow of the milk. He says, "I have never succeeded in picking a specimen so quietly as to prevent an instant and copious flow of its milk."

RUSSULA SUBDEPALLENS.

Pileus fleshy, at first convex and striate on the margin, then expanded or centrally depressed and tuberculate-striate on the margin, viscid, blood-red or purplish red, mottled with yellowish spots, becoming paler or almost white with age, often irregular, flesh fragile, white, becoming cinereous with age, reddish under the cuticle, taste mild; lamellae broad, subdistant, adnate, white

or whitish, the interspaces venose; stem stout, solid but spongy within, persistently white; spores white, globose, rough, .0003 in. broad; pileus 3-6 in. broad; stem 1.5-3 in. long, 6-12 lines thick.

Under a hickory tree. Trexlertown, Pennsylvania. June. W. Herbst.

Closely related to *Russula depallens*, from which it differs in having the margin of the pileus striate at first and more strongly so when mature, also in the pileus being spotted at first, the lamellae more distant, the stem persistently white and the spores white.

MARASMIUS GREGARIUS.

Pileus submembranous, glabrous, centrally depressed or broadly umbilicate, striatulate when moist, bay-brown or pale alutaceous, a little darker in the center; lamellae narrow, subdistant, adnate, some of them branched, whitish; stem short, slender, inserted, hollow, flocculose or almost pubescent, pale bay-brown, a little darker toward the base; spores subglobose, about .00016 in. broad; plant gregarious; pileus 4 to 6 lines broad; stem 4 to 6 lines long, about .5 line thick.

Decorticated wood. Mammoth Cave, Kentucky. June. C. G. Lloyd.

PANUS BETULINUS.

Pileus thin, suborbicular or dimidiate, nearly plane, glabrous, prolonged behind into a short stem, grayish-brown, darker or blackish toward the stem; lamellae narrow, close, decurrent, whitish; stem adorned with a slight tawny hairiness which is more fully developed toward the base; spores minute, .00016 to .0002 in. long, .00006 to .00008 broad.

Decaying wood of birch. Newfoundland. October. Rev. A. C. Waghorne.

LENTINUS MAGNUS.

Pileus thick, hard, convex, slightly depressed in the center, glabrous, dingy-white, the surface cracking into broad areolae or scales, margin involute, flesh whitish; lamellae broad, close, thick, slightly decurrent, coarsely dentate or lacerate on the edge, pallid; stem stout, hard, solid, squamose, slightly thickened at the base, colored like the pileus; spores oblong-elliptical, .0003 in. long, .00015 broad; pileus 6 in. or more broad, stem about 4 in. long, 1 in. or more thick.

Gregarious on ground abounding in humus. Mount San Antonio, California. August. Prof. A. J. McClatchie.

This large species was found at an elevation of 10,000 feet. It is well marked by the peculiar areolate and scaly cracking of the surface of the pileus. The scales of the stem are similar to those of the pileus. The lamellae are thicker than those of *Lentinus lepideus* and the spores are smaller. The scales are concolorous, not spot-like, as in that species.

LENTINUS UNDERWOODII.

Pileus fleshy, tough, convex or nearly plane, the glabrous surface cracking into areola-like scales which are indistinct or wanting toward the margin, whitish or slightly tinged with buff or pale ochraceous, flesh white; lamellae moderately close, decurrent, slightly connected or anastomosing at the base, somewhat notched on the edge, whitish, becoming discolored in drying; stem stout, hard, solid, eccentric, squamose, colored like the pileus; spores oblong, .0005-.0006 in. long, .0002-.00025 broad; plant caespitose; pileus 3-6 in. broad; stem 1.5-3 in. long, about 1 in. thick.

Wood of oak. Tuskegee, Alabama. July. Prof. L. M. Underwood.

This differs from *L. magnus* in its caespitose habit, eccentric stem, longer spores, less distinctly areolate-squamose pileus and in its habitat. The lamellae are connected at the base very much like those of *Pleurotus ostreatus*.

LENTINUS VENTRICOSUS.

Pileus fleshy, nearly plane above, glabrous, shining, white, the thin margin involute, flesh whitish; lamellae narrow, close, decurrent, serrate on the edge, whitish; stem short, thick, ventricose, smooth, solid, abruptly narrowed or pointed at the base, annulate, white, tinged within with isabelline; spores .0004 to .0005 in. long, .0002 to .00024 broad; pileus 4 to 6 in. broad; stem 1.5 to 2 in. long, nearly as broad in the thickest part.

Auburn, Alabama. December. Underwood.

A species well marked by its white glabrous pileus and its short ventricose annulate stem.

PHOLIOTA SABULOSA.

Pileus convex or nearly plane, glabrous, pale yellowish-brown; lamellae adnate, subdistant, yellowish-brown; stem short, equal or slightly tapering downwards, hollow, colored like or a little paler than the pileus, paler above the slight subevanescent annulus; spores subelliptical, brownish-ferruginous, .0003 to .0004 in. long;

.0002 to .00024 broad ; pileus 9 to 12 lines broad ; stem about 1 in. long, 1 to 2 lines thick.

Sandy soil. Alabama, December. Underwood.

In the dried specimens the pileus is pale-tawny and the lamellae are brownish ferruginous.

FLAMMULA UNDERWOODII.

Pileus convex or nearly plane, often irregular from its crowded mode of growth, squamulose or furfuraceous, yellowish-brown ; lamellae rather broad, close, adnate or slightly decurrent, yellow ; stem tapering downward, radicating, longitudinally streaked with brownish hues, yellow at the top ; spores elliptical, ochraceous, .00024 to .0003 in. long, .00016 to .0002 broad ; plant caespitose ; pileus 1 to 4 in. broad ; stem 2 to 4 in. long, 3 to 6 lines thick.

Pine trunks. Alabama, November. Underwood.

The species is apparently related to *Flammula sapineus*, from which its densely caespitose habit and brownish streaked stem will easily separate it.

GALERA SEMILANCEATA.

Pileus membranous, acutely conical or campanulate, often sharply umbonate, glabrous, sulcate-striate, pale-yellow or buff ; lamellae rather broad, ascending, distant, adnate, tawny-ferruginous when mature ; stem slender, glabrous, hollow, pallid ; spores elliptical, ferruginous, .0004 to .0005 in. long, .0002 to .00024 broad ; pileus 4 to 6 lines broad ; stem 1.5 to 2 in. long, .5 to 1 line thick.

Among fallen leaves, sticks, mosses, etc. Washington. December. Yeomans.

Mr. Yeomans remarks that this plant in size, shape and color corresponds very closely to Cooke's figure of *Psilocybe semilanceata*, but that the spores have a dark yellow-ochre color. The umbo when present is small and almost papilla-like.

TUBARIA TENUIS.

Pileus membranous, hemispherical or convex, obtuse or sub-umblicate, glabrous, hygrophane, reddish-cinnamon when moist, cream color or pale-ochraceous when dry, either faintly striate or sulcate-striate on the margin ; lamellae 1-2 lines wide, distant, ventricose, adnate or slightly decurrent, tawny-ochraceous ; stem slender, flexuous, often uneven, hollow, pruinose at the top, downy at the base, pale-yellow or cream color ; spores elliptical,

.0003 in. long, .0002 broad; pileus 4–8 lines broad; stem 1–2 in. long, about 1 line thick.

Among mosses on gravelly hillsides. Pasadena, California. January. McClatchie.

This species is variable and somewhat ambiguous between *Naucoria*, *Galera* and *Tubaria*, but the attachment of the lamellae indicates a close relationship to the genus *Tubaria*. From *Naucoria melinoides*, which it much resembles, it may be separated by its paler stem and smaller spores and by the tendency of the pileus to become centrally depressed or umbilicate. From *Naucoria pygmaea* and *Galera pygmaea-affinis* it may be distinguished by its yellowish stem and adnate or decurrent lamellae.

CORTINARIUS INTRUSUS.

Pileus fleshy, rather thin, convex, then expanded, glabrous, somewhat viscid when moist, even or radiately wrinkled on the margin, yellowish or buff, sometimes with a reddish tint, flesh white; lamellae thin, close, rounded behind, at first whitish or creamy white, then cinnamon, often uneven on the edge; stem equal or slightly tapering either upward or downward, stuffed or hollow, sometimes beautifully striate at the top only or nearly to the base, minutely floccose when young, soon glabrous, white; spores broadly elliptical, brownish cinnamon, .00024 to .0003 in. long, .00016 to .0002 broad; pileus 1–2.5 in. broad; stem 1–3 in. long, 3–6 lines thick.

Mushroom beds, manured soil in conservatories or in plant pots. Boston, Massachusetts. R. Macadam. Haddonfield, New Jersey. C. McIlvaine.

This interesting species is closely allied to *Cortinarius multiformis* and belongs to the Section Phlegmacium. It has a slight odor of radishes and is pronounced edible by Mr. McIlvaine. Its habitat is peculiar, but it possibly finds its way into conservatories and mushroom beds through the introduction of manure or soil, or leaf mold from the woods. It seems strange, however, that it has not yet been detected growing in the woods or fields. *Hebeloma fastibile* is said sometimes to invade mushroom beds, and our plant resembles it in so many particulars that it is with some hesitation that I separate it. The chief differences are in the stem and spores. The former, in *Hebeloma fastibile*, is described as solid and fibrous-squamose and the latter as 10 x 6 micromillimeters in

size. The brighter color of the smaller spores and the stuffed or hollow smooth stem of our plant will separate it from this species.

HYPHOLOMA ATROFOLIUM.

Pileus submembranous, at first convex or hemispherical, then broadly convex, commonly umbonate, minutely and irregularly furrowed, striate to the apex when mature, hygrophanous, burnt-umber or wood-brown when moist, fading to pale-tawny or cream color in drying, veil fugacious; lamellae subdistant, adnate, at first pale-brown or drab, then dark seal-brown, almost black; stem slender, fibrillose, hollow, pallid or cream color; spores very dark-brown, elliptical, .0004 in. long, .0002 broad; pileus 9–24 lines broad; stem 1–2.5 in. long, 1–1.5 lines thick.

Among bushes. Pasadena. January. McClatchie.

The plants are gregarious or loosely caespitose. The lamellae, when mature, are almost black, and on this account the species might be sought in the genus *Psathyrella*, but the form of the pileus indicates a closer relationship to the genus *Hypholoma*. Its hygrophanous character places the species in the section *Appendiculata*. In some respects it approaches *H. hymenoccephalum*, from which its convex pileus, less close and darker colored lamellae and longer spores will separate it.

PSATHYRELLA GRACILLIMA.

Pileus membranous, convex or nearly plane, finely striate nearly to the disk, subhyaline, bluish-white with a pinkish tint, the disk yellow and commonly depressed; lamellae thin, close, rounded behind and adnexed or nearly free, light slate color when young, becoming black or variegated with black; stem slender, elongated, erect, hollow, whitish or cream colored; spores oblong-elliptical, pointed at one end, .00055 to .0006 in long, .00024–.0003 broad; pileus 6 to 18 lines broad; stem 3–5 in. long, about 1 line thick.

Damp ground among weeds. Kansas. July. Bartholomew.

The notes of the collector describe the spores as dark brown, but they appear to me when viewed by reflected light to be black. The plant is very graceful and fragile. Its relationship seems to be with such species as *Psathyrella hiascens*, *P. trepida* and *P. hydrophora*, from all of which it may be separated by the attachment of the lamellae. The depressed disk suggests *Coprinus plicatilis*, but the specimens give no evidence of the deliquescence of the lamellae.

PSATHYRELLA DEBILIS.

Pileus membranous, campanulate, umbonate, finely striate nearly to the umbo, subhyaline, whitish, becoming grayish; lamellae thin, narrow, close, adnate, whitish when young, becoming black; stem slender, weak, flexuose, never erect, hollow, white; spores broadly elliptical, .0005 in. long, .0003 broad; pileus 6–15 lines broad; stem 2–3 in. long, 1–1.5 line thick.

Damp ground attached to decaying stems. Kansas. July: Bartholomew.

The plants are suggestive of *Psathyra gyroflexa*, but they differ in the umbonate pileus, the larger spores and in having no purplish tint to the lamellae.

BOLETINUS APPENDICULATUS.

Pileus fleshy, convex, glabrous, ochraceous-yellow, the margin appendiculate with an incurved membranous veil, flesh pale-yellow, unchangeable; tubes rather small, yellow, their mouths angular, unequal, becoming darker or brownish where wounded; stem solid, slightly thickened at the base, yellow; spores pale-yellow, oblong, .0004 to .0005 in. long, about .00016 broad; pileus 4 to 8 in. broad; stem 2 to 3 in. long, 4 to 6 lines thick.

Under or near fir trees. Washington. September to December. Yeomans.

BOLETUS TABACINUS.

Pileus fleshy, convex or nearly plane, subglabrous, often rimose-areolate, tawny-brown, flesh at maturity soft and similarly colored; tubes concave or nearly plane, depressed around the stem, their mouths small, angular, colored like the pileus; stem subequal, solid, reticulated, concolorous; spores oblong or subfusiform, .0005 to .00055 in. long, about .0002 broad; pileus 2.5 to 5 in. broad; stem 1.5 to 3 in. long, 6 to 10 lines thick.

Along roadsides. Alabama. May. Underwood.

The species is referable to the section *Calopodes*, but the tubes are more or less depressed about the stem. It is well marked by its color which is some shade of brown or tawny-brown throughout, inclining at one time toward wood-brown, isabelline-brown or broccoli-brown, at another toward sepia-brown. The flesh in the dried specimens appears a little darker than the surface of the pileus. It is almost tomentose in texture.

POLYPORUS BARTHOLOMAEI.

Pileus thin, rather soft but tough, obovate or subspathulate,

azotate, unpolished, thin on the margin, narrowed behind into a flattened stem-like base, whitish; pores small, short, subrotund, decurrent, whitish; pileus 6-10 lines broad, about 1 line thick.

Decaying sticks and chips on damp ground. Kansas. July. Bartholomew.

This plant resembles *Polyporus humilis* in size, color and general appearance, but it differs from it in texture. The notes of the collector say that the pileus is hygrophaneous. In the dried specimens its upper surface appears almost as if minutely tomentose or velvety pubescent. The margin beneath is sterile.

TYLOSTOMA PUNCTATUM.

Peridium subglobose, flattened and umbilicate at the base, the external peridium falling away above, persistent at the base, the internal peridium papery but rather firm and tough, minutely and irregularly punctate-pitted, whitish, the mouth slightly prominent, small, lacerated; stem cylindrical, obscurely squamose or rimose-squamose, sulcate-striate above, hollow, subserruginous, white within; spores pale-ferruginous, globose, minutely warted or roughened, .00016 to .0002 in. broad, the threads of the capillitium hyaline, sparsely branched, .0003 to .0004 in. broad, broader than the spores, the ends obtuse or subtruncate, occasionally thickened; spores globose, .00016 to .0002 in. broad; plant 1 to 1.5 in. high, peridium 5 to 6 lines in diameter; stem about 2 lines thick.

Sandy ground in pastures. Kansas. July. Bartholomew.

The peculiar character of the species is in the minute punctate pits or impressions in the inner peridium. These are somewhat scattered and unequal and are similar to those seen in the seed coat of some species of *Lithospermum*. I find no mention of such a character in any of the published species.

CLAVARIA PLATYCLADA.

Clubs caestipose, more or less connate at the base, simple or forked, rarely with one or two irregular branches, solid, compressed, tapering below into a whitish base, canary yellow, white within, the tips flattened, obtuse, becoming brownish with age; spores globose, .0002 to .00024 in. broad. Tufts 3 to 4 in. high; clubs 2 to 4 lines wide, scarcely more than 1 line thick.

Woods. Maine. September. Harriet C. Davis.

The species is closely allied to *Clavaria fusiformis*, from which it is separated by its solid, obtuse, compressed and often forked or branched clubs tapering below into a whitish base.

PEZIZA ODORATA.

Cups .5 to 3 in. broad, gregarious or scattered, thin, sessile, rather brittle when fresh, shallow expanded or even convex from the decurving of the margin, at first brownish, then white or whitish, the hymenium ochraceous-brown; asci cylindrical, opening by a lid, .01 to .012 in. long, .0006 to .0008 broad, paraphyses filiform, obscurely septate, slightly thickened at the tips; spores elliptical, even, .0008 to .0009 in. long, .0004 to .0005 broad.

Ground in a cellar. Maine. June. F. L. Harvey.

The plant when fresh has a peculiar fungoid odor suggestive of that of chestnut blossoms. The species is apparently allied to *P. Petersii*, from which it may be distinguished by its larger spores and distinct but peculiar odor. The spores also are not binucleate, as in that species. In drying, the hymenium is apt to become blackish.

SLEROTINIA INFUNDIBULIFORMIS.

Cups thin, regularly infundibuliform, glabrous, stipitate, rugose, bay-brown; hymenium even, bay-brown; stem long, slender, flexuous, attenuated downwards, colored like the cup, sometimes a little darker toward the base, growing from a small wrinkled black sclerotium; asci cylindrical, 8-spored, .005-.006 in. long, .0004-.0005 broad; spores elliptical, .0005 in. long, .00025 broad; paraphyses filiform, slightly thickened at the apex; cups 3-4 lines broad and high; stem about 6 lines long.

Wet woods. Newfoundland. August. Waghorne.

Further Observations on Antidromy.

BY GEORGE MACLOSIE.

It was shown in the BULLETIN of last year (p. 389, 466), by examples drawn from a large number of orders of Phaenogams, that there are probably two castes, a dextrorse and a sinistrorse, of every species. This "antidromy" was also traced generally to a diversity of the embryo in the seed, depending on whether it grows on one or other margin of a carpellary leaf. A further explanation, then only suggested, proves to hold in many cases: namely, that a forking rootstock produces antidromic plants on the two branches of the fork. This last explanation applies to such cases as *Richardia*, *Podophyllum*, *Nuphar*, *Helonias*, *Chaemae-*